

New Sheet

Leak Testing Failure Modes						
Mode 1	MS Test	WS1 Test	WS2 Test	Seal Test	Possible Failure	Most Likely Failure
1	F	F	F	F	1. Any Component from Each Test	1. Transducer 2. SSV Valve 3. Inject Valve 4. Fittings: Inj. Valve Port 2-SSV Valve Port2 Same as Possible
2	F	F	F	P	1. T15 (WKWSH VLV) 2. T19 (STG WSH VLV) 3. T21 (WSH SLC VLV)	4. WS2 Syringe 5. Fittings WS2 Port 2-Inj. Valve 6. Intermittent Failure MS Test Components
3	F	F	P	F	1. Sample Syringe 2. T16 (WSH BLK VLV) 3. T15 (WKWSH VLV) 4. WS1	1. Sample Syringe 2. T16 3. WS1 4. Fittings: WS1-Manifold Same as Possible
4	F	F	P	P	1. T15 (WKWSH VLV) 2. Fittings: WS1-Manifold 3. Intermittent Failure MS Test Components	1. T15 (WKWSH VLV) 2. Fittings: WS1-Manifold, WS1-Inj Valve Port 1 3. Intermittent Failure WS1-Manifold Same as Test 11 Same as Possible
5	F	P	F	F	1. Sample Syringe 2. T19 (STG WSH VLV) 3. WS2	1. Regulator 2. Fittings: WS2-Manifold, Manifold-Inj Valve Port 1 3. Intermittent Failure WS2 Components Same as Possible
6	F	P	F	P	1. T19 (STG WSH VLV) 2. WS2 3. Fittings: WS2-Manifold 4. Intermittent Failure MS Components	1. T19 (STG WSH VLV) 2. Seal 3. Regulator 4. Fittings: Manifold-Inj Valve Port 1 Same as Test 14 Same as Possible
7	F	P	P	F	1. Intermittent Failure Any Component of MS Test	1. Sample Syringe 2. Fitting: Inj Valve Port 1-SSV Port 3 Same as Possible
8	F	P	P	P	1. WS1 2. T16 (WSH BLK VLV) 3. T15 (WKWSH VLV) 4. T21 (WSH SLC VLV)	1. WS2 2. Regulator 3. Seal 4. Fittings: WS1-SSV Port 2, WS2-SSV Port 2, WS1-Inj Valve Same as Possible
9	P	F	F	F	1. T15 (WKWSH VLV) 2. T19 (STG WSH VLV) 3. T21 (WSH SLC VLV) 4. WS2	1. T16 2. T21 3. Fittings: Manifold-SSV Port 2 2. Fittings: Manifold-SSV Port 2 Same as Possible
10	P	F	F	P	1. T15 (WKWSH VLV) 2. T19 (STG WSH VLV) 3. T21 (WSH SLC VLV) 4. WS2	1. T21 2. Fittings: WS1-SSV Port 2 3. Fittings: Manifold-SSV Port 2 Same as Possible
11	P	F	P	F	1. WS1 2. T16 (WSH BLK VLV) 3. T15 (WKWSH VLV) 4. Seal	1. WS1 2. T16 3. Fittings: WS1-Manifold 4. Regulator 5. Fittings: WS1, WS2-SSV Port 2 Same as Possible
12	P	F	P	P	1. T15 (WKWSH VLV) 2. Fittings: WS1-Manifold	1. T15 (WKWSH VLV) 2. Seal 3. Regulator 4. Fittings: WS1-Manifold Same as Test 4 Same as Possible
13	P	P	F	F	1. WS2 2. T19 (STG WSH VLV)	1. WS2 2. T19 (STG WSH VLV) 3. Seal 4. Regulator 5. Fittings: WS1-Manifold, Manifold-Inj Port 1 6. Intermittent Failure of WS2 Tests Same as Possible
14	P	P	F	P	1. WS2 2. T19 (STG WSH VLV) 3. Fittings: WS2-Manifold 1	1. WS2 2. T19 (STG WSH VLV) 3. Seal 4. Regulator 5. Fittings: WS1-Manifold, Manifold-Inj Port 1 6. Intermittent Failure of WS2 Tests Same as Test 6 Same as Possible
15	P	P	P	F	1. Seal 2. Regulator 3. Fittings: Manifold-Inj Port 1 All Components Working Order	1. Seal 2. Regulator 3. Fittings: Manifold-Inj Port 1 All Components Working Order Same as Possible
16	P	P	P	P		

Failure Mode not Likely Unless Intermittent Failure
Analysis Assumes the Tests are Run in MS - Seal Order and the Tests look at Pressure and Leak Rate only

FIG. 6E